Eur J Ageing (2010) 7:101–109
DOI 10.1007/s10433-010-0150-8

ORIGINAL INVESTIGATION

The use of social services by community-dwelling older persons who are at risk of institutionalization: a survey

P. M. A. van Bilsen · J. P. H. Hamers · A. A. M. Don · W. Groot · C. Spreeuwenberg

Received: 16 February 2009 / Accepted: 25 April 2010 / Published online: 17 July 2010

Abstract The use of community-based social services additionally to regular home help services to support older persons at risk of institutionalization was studied. Structured interviews were held with 292 persons, who specifically pointed out that they prefer to remain independently at home. Bivariate and multivariate logistic regression models were developed to study the association between social service use and personal, health-related and well-being characteristics. 195 respondents indicated that they made use of at least one social service (68%). Only three services (individual care, social-cultural activities and restaurant facilities), out of nine, were used regularly. Those who lived in a sheltered environment or were supported by informal caregivers or who visited day care had a significantly higher probability of using these services. More attention should be given to the nature and accessibility of community-based social services in order to have distinctive added value in enabling older persons to age in place.

Keywords Community-based health care use · Social services · Elderly

P. M. A. van Bilsen · J. P. H. Hamers (✉) · A. A. M. Don
School for Public Health and Primary Care (CAPHRI), Faculty of Health Medicine and Life Sciences/HCNS, Maastricht University, P.O. Box 616, 6200 MD Maastricht, The Netherlands
e-mail: jph.hamers@zw.unimaas.nl

W. Groot
Department of Health Organization, Policy and Economics, Maastricht University, Maastricht, The Netherlands

C. Spreeuwenberg
School for Public Health and Primary Care (CAPHRI), Maastricht University, Maastricht, The Netherlands

Introduction

As the majority of older persons in western countries desire to live in their own home as long as possible, and with the costs of institutional care rapidly increasing, policies and services are focusing more and more on the community rather than on institutions as the primary setting for long-term care (Gibler et al. 1998; Rosenberg and Everitt 2001; Rauner and Vissers 2003; Cox 2005; Van Bilsen et al. 2002). Consequently, an increasing number of community-based services are being set up. The precise nature of these services varies, but most programmes involve some combinations of in-home care (household activities, personal care, home nursing), day care activities, and social and supplementary services (e.g., companion services, distance-based health care, meals or transport services) (Cox 2005; Greene 1993; Gaugler et al. 2005; Borgenicht et al. 1997; Plochg and Klazinga 2002; Duke 2005). These community-based care packages are delivered to older people living independently and are intended to support them in their activities of daily living.

Although these community-based services have become available, their availability does not imply actual use (Cox 2005). Factors related to the use of suitable services are: perceived need, knowledge, availability (e.g., waiting lists), accessibility as defined by service attractiveness, acceptability, attitudes toward service use, severity of the disabilities, patterns of self-care and the ability to cope with changing circumstances (Andersen and Newman 1973; Wallace 1990; Yeatts et al. 1992; Norburn et al. 1995; Van Bilsen et al. 2006; Schoenberg and Coward 1998). Walker et al. (1998) concluded that older persons living in sheltered accommodation were more likely to use social services as compared to those living independently in the community. This difference could not be accounted for by greater

disability and larger numbers of people living alone, which suggests that these services may preferably be allocated to older people residing in sheltered accommodation. Fokkema and Van Tilburg (2005) found the following preconditions for the use of companion services to prevent loneliness in community-dwelling older persons: relatively good health, sufficient income and basic social skills.

Following Dutch national policy to develop and improve community-based long-term care and services (Ross-van Dorp 2003a, b), a coordinated package of community-based social services has been developed and implemented in two regions of the Netherlands (Limburg and Zeeland). These services, offered by welfare organizations in close cooperation with regular home care organizations, can be divided into counselling activities (individual or group counselling), provision of information (personal adviser), companion services (restaurant facility, telephone circle and buddy project), socio-cultural activities (e.g., cultural, sportive, creative activities) and services like home library service and administrative support. It should be emphasised that these social services are offered additional to regular community-based home help services like household support, personal care (e.g., help with taking a shower, dressing, shaving, skin care, going to the toilet), nursing care (e.g., dressing wounds, giving injections, showing clients how to self-inject) and day-care. To encourage older people to make use of these additional social services, the costs of their participation were reimbursed by an extra government-sponsored financial contribution (Ross-van Dorp 2003a, b).

These community-based social services aim to serve older persons who are 'at risk of institutionalization', but who express a preference for remaining independent at home. 'At risk of institutionalization' means that these persons—based on a uniform nationwide assessment device—are eligible for admission to a home for the elderly (Ross-van Dorp 2003a, b; Ministry of Health, Welfare and Sports 1997; National Council for Public Health 1994). As a result of their 'at risk' status, these persons are automatically registered on a waiting list for admission to old-age homes; institutions for persons unable to live independently, but usually require no more nursing care than can be given by a visiting nurse.

In order to evaluate this community-based package of social services, the primary aim of this study is to explore the use of these services by older persons at risk of institutionalization who prefer to remain in the community. To understand the use of social services, personal characteristics (e.g., age, housing, marital status, knowledge on social service supply), health-related characteristics (e.g., functional status, vitality, mobility), subjective well-being (e.g., autonomy, feelings of insecurity and loneliness, quality of life, life satisfaction), use of informal care, home help services and day care were studied in relation to the use of social services. More specifically, the research questions in this study were:

- To what extent are community-based social services being used by older persons at risk of institutionalization?
- Is there a relationship between social service use and diverse personal, health-related and well-being characteristics?

Methods

Design

A cross-sectional study was conducted in 2004 and 2005, by interviewing older persons in two regions (Limburg and Zeeland) of the Netherlands.

Subjects

The managing directors of the homes for the elderly selected all community-dwelling persons (older than 65 years), who were at risk for institutionalization ($n = 707$) and registered on waiting lists for admission to homes for the elderly. Older persons who moved into homes for the elderly during the study period, or specifically pointed out that they preferred admission into a home for the elderly, were excluded. It should be mentioned explicitly that sheltered living older persons who were at risk for institutionalization were included in the sample as well. Although sheltered accommodation offers a more secure environment for disabled persons, these persons are still living independently and are not restricted by an institutional setting.

Procedure and ethical considerations

Written information about the study was sent to those older persons selected. Information was given about the aim of the study, research method, procedure, anonymity with regard to data analysis, and a telephone number in case the older people required more information. Special attention was paid to the fact that participation was voluntary. A few days after this letter had been sent, they were contacted by telephone to ask whether they would like to participate. If they agreed, a date was set for an interview. Reasons for refusal were systematically recorded.

No approval of an established medical ethical board was needed because the respondents were not subjected to procedures or required to follow rules of behaviour (Central Committee on Research Involving Human Subjects, known by the Dutch initials, CCMO).

Study variables

Data were collected by means of face to face interviews using a structured questionnaire. In order to answer the first research question, questions were asked about the *use of community-based social services*. Respondents were asked to indicate whether they used the social services set up in the region. In Limburg all services—individual counselling, group counselling, personal adviser, restaurant facility, telephone circle, buddy project, socio-cultural activities, home library service and administrative support—were brought up during the interview. In Zeeland only a selection of these services have been implemented and evaluated: personal adviser, companion services (restaurant facility, telephone circle, buddy project), socio-cultural activities. The respondents had to answer with a simple 'yes' or 'no' indicating whether they used the services or not.

To investigate the association between the use of social services and several determinants, some personal characteristics (age, gender, housing, marital status), health-related characteristics, subjective well-being and the use of (in)formal care at home were measured. Due to the fact that the lack of knowledge could be an important factor in hindering older people using service supply, the respondents were asked whether they had a conversation with their formal care giver about the newly introduced social services (*knowledge)*. The respondents had to answer with a simple 'yes' or 'no' indicating whether they had a conversation or not.

Functional status was measured using the Groningen Activity Restriction Scale (Kempen et al. 1993, 1996). Respondents were asked to indicate to what extent they were still able to engage in the activities of daily living related to personal care (ADL) (11 activities) and so-called instrumental activities related to more complex activities like housekeeping, preparing meals and shopping for groceries (IADL) (seven activities). The respondents had to answer on a three-point ordinal scale to what extent they were able to carry out activities of daily living, ranging from performing them completely independently (score 1) to performing them only with help from others (score 3). The meaning of the scores and a summary of the statistics (Cronbach's α, range, mean scores, standard deviation) are presented in Table 1.

The respondents' perceived *accessibility problems in and outside the home* and nearby area were assessed by means of five questions, in order to assess their mobility and functional impairment in terms of getting around. These questions were derived from the official assessment protocol of the assessment agency. The respondents had to answer on a three-point ordinal scale to what extent they had problems moving around inside and outside their house, using the bathroom, kitchen or toilet, in addition to

Table 1 Summary of the statistics of variables measured

Domains	No. items	Range	Alpha[a]	Mean score (sd)	Meaning of scores	
					Low	High
Functional status	18	18–54	0.89	32.1 (7.4)	Severely limited in performing all types of (I)ADL activities independently	Performing all types of daily (I)ADL activities without help from others
Accessibility of house and nearby area	5	0–10	0.67	1.7 (1.9)	No problems with accessibility in their home and nearby area	Great perceived problems with accessibility in their home and nearby area
Well-being						
Vitality	4	0–100	0.76	57.8 (17.3)	Feeling tired and worn out all of the time	Feeling full of zest and energy all of the time
Mental health	5	0–100	0.77	68.9 (16.1)	Feeling nervous and depressed all of the time	Feeling peaceful, happy and calm all of the time
Life satisfaction	5	5–35	0.74	26.5 (5.3)	Low perceived life satisfaction	High perceived life satisfaction
Loneliness	11	0–11	0.79	3.2 (2.9)	Having no feelings of loneliness	Having serious feelings of loneliness and emptiness
Quality of life	1	0–100	–	64.3 (16.7)	Very low quality of life	Very high quality of life
Autonomy	6	6–30	0.68	24.3 (3.3)	Perceiving dependence on others	Not perceiving dependence on others
Insecurity	4	4–20	0.34	13.2 (2.5)	Feelings of insecurity	Greater perceived security

[a] Cronbach's Alpha

the accessibility of public facilities like grocery shops, bus stops or banks (0 = no problem, 1 = somewhat of a problem, 2 = serious problem). Higher scores meant that the respondents experienced more problems with their housing and nearby residential area (see Table 1).

Subjective well-being consists of an affective, emotional component and a self-rated satisfaction with life. The affective component was measured with two subscales of the RAND-36 Health Survey (RAND-36): '*mental health*' (five items) and '*vitality*' (four items) (Van der Zee and Sandermans 1993; Moorer et al. 2001). The respondents had to answer on a six-point ordinal scale to what extent they felt f.i. nervous, depressed or energetic. The response categories varied from 'constantly' (score 1) to 'never' (score 6). These scores were transformed to a 100-point scale, with higher scores indicating greater perceived subjective well-being (see Table 1).

The respondents' opinions about *life satisfaction* were measured with the Satisfaction With Life Scale (SWLS) (five items) (Diener et al. 1985). The respondents had to answer on a seven-point scale to what extent they agreed with propositions about life satisfaction like 'My life is ideal in most respects' or 'On the whole, I'm satisfied with my life'. Response options varied from 'I strongly disagree' (score 1), to 'I strongly agree' (score 7). Higher scores indicated a more positive perception of life satisfaction (see Table 1).

Loneliness was measured with the Rasch-type loneliness scale (11 items) (De Jong-Gierveld and Kamphuis 1985; De Jong-Gierveld and Van Tilburg 1999). Respondents had to answer on a five-point ordinal scale to what extent they felt they lacked a special friend or company in general, or experienced feelings of loneliness and emptiness. The answers were then recoded resulting in a scale from 0 to 11. Higher scores implied that the respondents experienced more feelings of loneliness (see Table 1).

Overall *quality of life* was assessed with one question on a Visual Analogue Scale (VAS) (Wevers and Lowe 1990; Miller and Ferris 1993). The respondents had to indicate their quality of life on a 100-mm VAS (with '0' representing very low quality of life and '100' representing very high quality of life) (see Table 1). However, during data collection we found that the phrasing of this question and the accompanying request to put a mark on the VAS caused problems. In order to avoid too many missing values, we introduced an alternative assessment method for those respondents who were not able to put a mark on the VAS. These respondents were asked to give a grade between 0 and 100. Consequently, both groups (older persons who indicated their quality of life on the VAS and those who gave a grade) were studied separately with regard to their use of social services.

Autonomy and feelings of insecurity are very important aspects of quality of life for older persons, especially when they become more disabled and fragile (Halvorsrud and Kalfoss 2007; Bowling et al. 2002; Kalfoss and Halvorsrud 2009; Kelley-Gillespie 2009; Walker 2005). However, no valid and reliable instrument was available to measure these variables in this specific population (Van Campen and Kerkstra 1995). Therefore, ten self-developed items were added (six items about autonomy and four items about insecurity) (see Table 2). These items were phrased on the basis of results of earlier research about older persons' basic and care needs (Van Bilsen et al. 2002), and are expected to have face validity. Respondents had to answer on a five-point ordinal scale to what extent they felt dependent on others, were receiving care at the time when they wanted it and felt secure in their own home and social environment. The response categories were: 'Strongly agree', 'Agree', 'Neither agree or disagree', 'Disagree', 'Strongly disagree'. A higher score meant that the respondents felt they were more independent from others and more secure (see Table 1).

The *use of formal home care* was assessed by asking the respondents whether they visited day care centres or were receiving assistance for housekeeping, personal or nursing care at home. Informal care was defined as care given to older persons, outside the framework of organized, paid,

Table 2 Content of the 6 item autonomy, and the 4 item insecurity sub-scales

Autonomy	Insecurity
1. The care I receive is given the way I want it	1. I do not feel secure outdoors during the daytime
2. The care I receive is given at the times which are most convenient to me	2. Because of my limitations, I feel very vulnerable when I am alone
3. I feel very dependent on others	3. I have feelings of anxiety when I am at home on my own
4. My caregivers take my personal wishes and preferences into consideration	4. I always stay inside the house once it is dark outside
5. Despite my limitations, I live my life the way I want to	
6. I have the feeling that others determine what is good for me more and more often	

professional work. Consequently, an informal caregiver was considered to be a person, such as a partner, family member, friend or neighbour, who provides regular and sustained support to the person requiring care, usually on an unpaid basis. The presence of informal care was measured by the question: Are you receiving assistance from informal caregivers on a regular basis? If necessary an explanation about what was meant by informal care, was given by the interviewer.

With the exception of the self-developed measures 'autonomy', 'insecurity' and the mobility-scale, we used measurements that reportedly have satisfying psychometric properties (Van der Zee and Sanderman 1993; Moorer et al. 2001; Diener et al. 1985; De Jong-Gierveld and Van Tilburg 1999; Kempen et al. 1996). Except for feelings of insecurity (Cronbach's $\alpha = 0.34$) (Nunnally 1978), these measurements also proved to be internally consistent in this study (with a Cronbach's α range based on the data of 0.67–0.89) (Table 1, fourth column).

Statistical methods

Statistical evaluation of the study aims began with descriptive analyses (frequencies, mean, deviation and sum scores), followed by bivariate analyses of associations between outcome and independent variables. Use of community-based social services was measured as participating in at least one social service. Differences between respondents using social services and those who did not use any social service at all were investigated using the chi-square test for variables at a dichotomous level and One-way ANOVA for variables at an interval and ratio level.

A multivariate logistic model was developed to explore the association between the independent variables and social service use. Only those characteristics that had a statistically significant bivariate association ($P < 0.05$) with social service use were included in the model. The odds ratios (OR) and corresponding 95% confidence intervals (CI) derived from the model are effect estimates simultaneously adjusted for other factors in the model.

Results

Sample

A considerable proportion of the selected persons ($n = 707$), were never reached because there was no answer after multiple attempts ($n = 61$), or because they showed no interest and consequently refused to participate ($n = 161$). Figure 1 presents a chart of the response. Another 82 persons claimed to be too sick, confused or disabled (e.g., because of hearing and vision problems) to participate. Eventually, 334 interviews were conducted (response rate of 47.2%). The respondents who moved into homes for the elderly in the meantime ($n = 17$) and those, who specifically pointed out that they preferred admission into a home for the elderly and no longer wanting to live independently in the community ($n = 25$) were excluded (see exclusion criteria "Methods" section). Unfortunately no background information was available about those persons we were not able to contact and the non-responders.

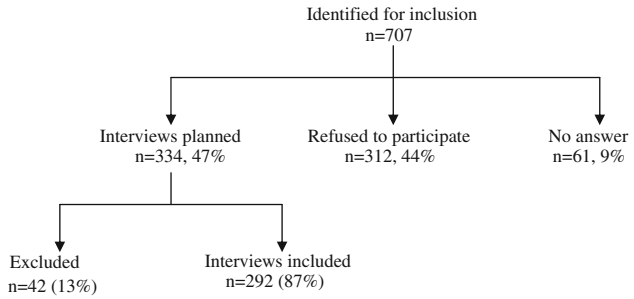

Fig. 1 Responce flow

The sample consisted of 292 older persons (80 men and 212 women; 110 subjects lived in the region of Limburg and 182 in Zeeland). Their mean age was 83.4 years (SD = 5.9, range 65–97). Two hundred and thirty-one respondents were living alone, while 61 respondents were living with someone else, such as a partner ($n = 50$), children ($n = 5$) or others ($n = 6$). One hundred and seventy respondents (58.2%) were living in a accommodation which was purpose-built for older persons (e.g., no stairs, specially adapted and with easy access to bathrooms and kitchens, widened doors in hallways, etc.) and one or more features of traditional 'sheltered' accommodation (e.g., concentration of apartments, communal services or rooms, home care alert, etc.). Another 53 respondents were living in bungalows or apartments with all living areas on a single floor and no stairs. However, these buildings were not adapted to the needs of older persons. Sixty-nine respondents were living in non-ground-floor buildings with a first and second floor, and no lift to get to the second floor or further adjustments for disabled older persons. Based on these results we decided to make a distinction between older persons who lived in purpose-built (sheltered) buildings, and those living in (non-ground-floor) buildings with no adjustments for disabled older persons.

Use of social services

With regard to the use of social services, the data of five respondents (1.7%) were systematically missing. Of the remaining respondents ($n = 287$), 195 respondents indicated that they made use of at least one social service

(67.9%). The most frequently used services in both regions were socio-cultural activities (51.7%, $n = 148$) and restaurant facilities (21.7%, $n = 62$) (Table 3). Individual care by a social worker was used by 30.9% of the respondents in the Limburg region. Over 14% of the respondents ($n = 41$) participated in the buddy project, meaning that volunteers visited these clients once a week. Thirty-nine older persons (13.6%) were informed by a personal adviser. Administrative assistance, group counselling and telephone circle were used by less than 6% of the respondents.

Table 3 Community-based social services according to the respondents and the health and social service managers ($n = 292$)

	Respondents[a] $n = 287$ (%)
Social, cultural and creative activities	148 (51.7)
Individual care by social worker[b]	34 (30.9)
Restaurant facilities	62 (21.7)
Buddy project	41 (14.3)
Personal adviser	39 (13.6)
Home library service[b]	10 (9.1)
Group counselling by social worker[b]	6 (5.5)
Administrative assistance[b]	6 (5.5)
Telephone circle	4 (1.4)
Total use	350

[a] The data of five respondents on their use or non-use of social service were missing

[b] These services have only been set up and assessed in the Limburg region ($n = 110$)

The relationship between the use of community-based social services and demographic, health and well-being characteristics

Bivariate associations between social service use and demographic, health and wellbeing characteristics are shown in Table 4. The association between social service use and living conditions, housing, informal care, day care, problems with housing and nearby environment, and functional status (especially IADL), was statistically significant. Users of social services were more likely to live alone ($P = 0.027$) or in a purpose-built accommodation for older persons, whether sheltered or not ($P = 0.002$). Users of social services received informal care more often ($P = 0.024$): 71.6% of the respondents who used social services had an informal caregiver compared to 58.2% of

Table 4 Users of community-based social services compared with non-users ($n = 287$)

Characteristics of the respondents	Use $n = 195$ Bivariate analyses	Non-use $n = 92$	P value	OR[c] Logistic regression	95% CI
Age (SD)[a]	83.5 (sd 5.6)	83.1 (sd 6.6)	0.596	–	–
Gender [b] (female)	142 (72.8%)	66 (71.7%)	0.848	–	–
Living condition[b] (alone)	162 (83.1%)	66 (71.7%)	**0.027**	0.56	0.30–1.07
Purpose-built (sheltered) accommodation[b] (yes)	127 (65.1%)	42 (45.7%)	**0.002**	**2.53**	**1.44–4.45**
Being informed about the new social services[b] (yes)	160 (55.9%)	72 (25.2%)	0.331		
Informal care[b] (yes)	139 (71.6%)	53 (58.2%)	**0.024**	**1.98**	**1.12–3.51**
Household assistance[b] (yes)	175 (90.2%)	83 (90.2%)	0.901	–	–
Personal care[b] (yes)	106 (54.4%)	55 (59.8%)	0.388	–	–
Nursing[b] (yes)	74 (37.9%)	28 (30.8%)	0.238	–	–
Day care[b] (yes)	38 (19.5%)	6 (6.5%)	**0.004**	**4.76**	**1.81–12.54**
Functional Status (GARS) (18–54)[a]	31.5 (7.0)	33.7 (8.1)	**0.021**	1.00	0.92–1.09
ADL	17.1 (4.2)	18.1 (5.0)	0.061	–	–
IADL	14.5 (3.5)	15.6 (3.7)	**0.015**	0.93	0.78–1.10
Accessibility of house and nearby area (0–10)[a]	1.5 (1.8)	2.2 (2.2)	**0.005**	0.90	0.76–1.06
Vitality (0–100)[a]	58.3 (17.5)	56.4 (17.4)	0.390	–	–
Mental health (0–100)[a]	68.2 (16.5)	70.2 (15.6)	0.316	–	–
Opinion about life satisfaction[a] (5–35)	26.4 (5.1)	26.5 (6.0)	0.796	–	–
Feelings of loneliness (0–11)[a]	3.2 (2.9)	3.1 (3.0)	0.740	–	–
Perceived autonomy (6–30)[a]	24.2 (3.1)	24.4 (3.7)	0.124	–	–
Quality of life (0–100)[a]	65.3 (15.7)	61.5 (18.7)	0.087	–	–
QoL (VAS) $n = 154$ (57.7%)	61.6 (15.5)	58.1 (20.2)	0.253	–	–
QoL (report) $n = 113$ (42.3%)	70.8 (14.4)	65.7 (15.9)	0.093	–	–

5 respondents missing, [a] t-test, [b] Chi square, [c] $P < 0.05$

the non-users. Users of social services and non-users received similar assistance in housekeeping, personal care or nursing. However, users of social services were more likely to visit day care as compared to non-users ($P = 0.004$). Furthermore, users of social services experienced fewer functional limitations in everyday activities ($P = 0.021$). Non-users especially were less able to engage in activities related to independent living (e.g., preparing meals, shopping for groceries) ($P = 0.015$). In addition, users of social services had fewer problems with their housing and nearby area ($P = 0.005$). The users of social services tended to assess their quality of life higher (65.3 on a scale from '0' to 100) compared to non-users (61.5). However, this difference proved not to be statistically significant ($P = 0.087$).

After examining these relationships, only those variables that had a bivariate association ($P < 0.05$) with social service use were included in a logistic regression model to examine the individual contribution of the predictors. The results showed that living in (sheltered) accommodation adapted to the needs of older persons (OR 2.53), the availability of informal care (OR 1.98) and visiting day care (OR 4.76) were the most important determinants of social service use (Table 4).

Discussion and conclusion

In this study we explored the use of community-based social services by older persons at risk of institutionalization who explicitly prefer to remain in the community. Based on the results, it can be concluded that individual care, social-cultural activities and restaurant facilities were the most frequently used services. The six remaining services (group counselling, personal adviser, home library service, telephone circle, buddy project, administrative assistance) were—according to the answers of the respondents—used by less than 15% of the older persons, of which three services (group counselling, telephone circle and administrative assistance) were used by even less than 6% of the respondents. Group comparison shows that users of social services were less impaired than non-users. Users were more capable to performing activities of daily life and experienced fewer mobility problems in and around the house. Above all, users of social services received informal care or day care more often, and were more likely to live in a purpose-built (sheltered) accommodation (Table 4).

This study was subjected to some limitations. First, the study used a cross-sectional design. So no definitive conclusions can be drawn with regard to causal relationships between the use of social services and determinants. For example, based on the bivariate association between informal care and the use of social services, it can not be concluded that all older persons with informal care, are more likely to use social services. Second, the possibility of selection bias cannot be ignored based on the (reasons of) non-response. Despite the fact that the response rate (47%) was not unusual for this population (Van Eijk and Miedema 2001), it is possible that the respondents were the relatively healthier part of the older people included. However, all older persons selected were 'at risk of institutionalization' based on a uniform nationwide assessment device. A third limitation of our study concerns dissatisfying psychometric properties of some measures. The scale 'autonomy' proved to be internally consistent and seems to have face validity. The scale 'insecurity', nonetheless, was not internally consistent. Consequently, the results with regard to these measures should be interpreted with caution. Further, no information on the psychometric properties of the measure 'accessibility of house and nearby area' is available. In this study however, this measure proved to be reliable. Based on the problems of older people to put a mark on the VAS to measure quality of live (fourth limitation), it seems advisable to use a more practical applicable measure in this population. Especially, given the fact that users of social services tended to assess their quality of life higher compared to non-users. Alternatives should be considered like the vertical VAS 'thermometer', which proved to be easier for older people to complete (Streiner and Norman 2003).

The main finding of this study was that only three out of the nine newly introduced services were used regularly. With the exception of individual counselling, socio-cultural activities (e.g., sports, games, excursions) and restaurant facilities, the use of the other six services was limited. Obviously there is a discrepancy between the supply of these community-based social services and the perceived need for these services by those at risk of being institutionalized. This raises questions about the nature of the services offered ('Do older people actually want these specific social services?'), the accessibility of the services ('Which barriers could be hindering older people from using these services?'), the population 'at risk of institutionalization' ('Is this old and frail population still interested in community-based social services?') and the ability of these social services to contribute to de-institutionalization ('Do these services support older people in their activities of daily living?).

Although not all of these questions can be answered based on these results, the comparison between the users and non-users of social services did reveal some factors that could explain the utilisation of services. These factors were foremost related to the accessibility of the social services, on the one hand, and the ability of older persons to use them, on the other. The fact that social activities are usually organized at communal locations or day care

centres linked to purpose-built accommodation for older persons, increases the accessibility of these activities for persons living there. This may explain why respondents living in purpose-built accommodation were more likely to use social services than were those living in (non-ground-floor) buildings with no adjustments for disabled older persons. This finding is in line with earlier results of Walker et al. (1998). We also found that users of social services were less functionally impaired and inconvenienced by inadequate accessibility of in their house and nearby area. This may be an indication that users of social services perceive fewer (physical) barriers to using social services. The finding that older persons who receive informal care were more likely to use social services is probably related to this accessibility issue as well. The involvement of informal caregivers might indicate that older persons were better informed about the services, and were more stimulated and enabled to access them (e.g., transport).

Based on these findings, a well-thought-out approach to rethinking the current supply of community-based social services and potential barriers to them is to be recommended. Additionally, it should become clear whether these community-based services enable older persons at risk of institutionalization to age in place and actually support older people in their activities of daily living. This knowledge should contribute to a more demand-oriented approach in which care-supply is guided by older person's wants and basic need to age outside the walls of institutions (Hamers and Van Bilsen 2006). This latter is indisputable and generally accepted. Older persons increasingly want a more varied provision of (health care) services and facilities, so they can age in their familiar home environment as long as possible.

References

Andersen R, Newman JF (1973) Societal and individual determination of medical care utilization in the United States. Milbank Meml Fund Q 51:95–124

Borgenicht K, Carty E, Feigenbaum LZ (1997) Community resources for frail older patients. West J Med 167:291–294

Bowling A, Banister D, Sutton S, Evans O, Windsor J (2002) A multidimensional model of the quality of life in older age. Aging Ment Health 6(4):355–371

Central Committee on Research Involving Human Subjects (known by the Dutch initials CCMO). Retrieved from www.ccmo.nl

Cox CB (2005) Community care for an aging society. Issues, policies and services. Springer Publishing Company, Inc., New York

De Jong-Gierveld J, Kamphuis F (1985) The development of a Rasch-type loneliness scale. Appl Psychol Meas 9:289–299

De Jong-Gierveld J, Van Tilburg T (1999) Manual of the loneliness scale. Retrieved from http://home.scw.vu.nl/~tilburg/manual_loneliness_scale_1999.html

Diener E, Emmons RA, Larsen RJ, Griffin S (1985) The satisfaction with life scale. J Pers Assess 49(1):71–75

Duke C (2005) The frail elderly community-based case management project. Geriatr Nurs 26(2):122–127

Fokkema T, Van Tilburg T (2005) Eenzaam en dan? De (on)mogelijkheden van interventies bij ouderen. (Loneliness and then what? The (im)possibilities of interventions by elderly people). Stichting Sluyterman van Loo, Beverwijk

Gaugler JE, Kane RL, Kane RA, Newcomer R (2005) Early community-based service utilization and its effects on institutionalization in dementia caregiving. The Gerontologist 45(2): 177–185

Gibler KM, Moschis GP, Lee E (1998) Planning to move to retirement housing. Financ Serv Rev 7(4):291–300

Greene VL (1993) Do community-based long-term-care services reduce nursing home use? A transition probability analysis. J Hum Resour 28(2):297–317

Halvorsrud L, Kalfoss M (2007) The conceptualization and measurement of quality of life in older adults: a review of empirical studies published during 1994–2006. Eur J Ageing 4(4):229–246

Hamers JPH, Van Bilsen PMA (2006) The care of the elderly in nursing settings—are those cared for getting what they need? In: Sousa-Poza A (ed) Proceedings of the 2nd world ageing and generations congress. World Demographic Association, St. Gallen

Kalfoss M, Halvorsrud L (2009) Important issues to quality of life among Norwegian older adults: an exploratory study. Open Nurs J 3:45–55

Kelley-Gillespie N (2009) An integrated conceptual model of quality of life for older adults based on a synthesis of the literature. Appl Res Qual Life. doi: 10.2007/s11482-009-9075-9

Kempen GIJM, Doeglas DM, Suurmeijer TPBM (1993) Het meten van problemen met zelfredzaamheid op verzorgend en huishoudelijk gebied met de Groningen Activiteiten Restrictie Schaal (GARS): een handleiding (Measuring functional status with regard to personal and domestic care by the Groningen Activity Restriction Scale: a manual). Noordelijk Centrum voor Gezondheidsvraagstukken, Rijksuniversiteit Groningen, Groningen

Kempen GIJM, Miedema I, Ormel J, Molenaar W (1996) The assessment of disability with the Groningen Activity Restriction Scale Conceptual framework and psychometric properties. Soc Sci Med 43(11):1601–1610

Miller MD, Ferris DG (1993) Measurement of subjective phenomena in primary care research: the visual analogue scale. Family Pract Res J 13(1):15–24

Ministry of Health, Welfare and Sport Zorgindicatiebesluit; Besluit van 2 oktober 1997, houdende regels met betrekking tot werkterrein, de samenstelling en werkwijze van indicatieorganen (Care Needs Assessment Decree; White Paper of October, 2, 1997, regulating the activities, formation and mode of operation of Regional Needs Assessment Agencies). Staatsblad van het Koningrijk der Nederlanden 1997;Sdu 447

Moorer P, Suurmeijer PBM, Foets M, Molenaar IW (2001) Psychometric properties of the RAND-36 among three chronic diseases (multiple sclerosis, rheumatic diseases and COPD) in the Netherlands. Qual Life Res 10:637–645

National Council for Public Health (1994) Indicatiestelling en zorg op maat: advies van de Nationale Raad voor de Volksgezondheid en het College voor Ziekenhuisvoorzieningen (Needs assessments and customised care: recommendations by the National Council

for Public Health and the Council for Hospital Facilities). National Council for Public Health, Zoetermeer

Norburn J, Bernard S, Konrad T, Woomert A, De Friese G, Kalsbeek W, Koch G, Ory M (1995) Self-care and assistance from others in coping with functional status limitations among a national sample of older adults. J Gerontol Soc Sci 50B:S101–S109

Nunnally JCJ (1978) Psychometric theory, 2nd edn. McGraw-Hill, New York

Plochg T, Klazinga S (2002) Community-based integrated care: myth or must? Int J Qual Health Care 14(2):91–101

Rauner MS, Vissers JMH (2003) OR applied to health services: planning for the future with scarce resources. Eur J Oper Res 150(1):1–2

Rosenberg M, Everitt J (2001) Planning for aging populations: inside or outside the walls. Prog Plan 56(3):119–168

Ross-van Dorp C (2003a) Extramuralisering in relatie tot de modernisering van de AWBZ en bouwproblematiek intramurale zorg. Transformation of institutions into independent dwellings in relation to the Exceptional Medical Expenses Act and intramural care). Ministry of Health, Welfare and Sport (VWS), The Haque

Ross-van Dorp C (2003b) Subsidieregeling diensten bij wonen met zorg (Government-sponsored financial contribution for housing and care). Ministry of Health, Welfare and Sport (VWS), The Haque

Schoenberg N, Coward R (1998) Residential differences in attitudes about barriers to using community-based services among older elderly. J Rural Health 14(4):295–304

Streiner DL, Norman GR (2003) Health measurement scales. A practical guide to their development and use. Oxford University Press, New York

Van Bilsen PMA, Hamers JPH, Groot W, Spreeuwenberg C (2002) Welke zorg vragen ouderen? Een inventarisatie (What care do elderly people ask for? An overview). Universitaire Pers Maastricht, Maastricht

Van Bilsen PMA, Hamers JPH, Groot W, Spreeuwenberg C (2006) Demand of elderly people for residential care: an exploratory study. BMC Health Serv Res 6(39)

Van Campen C, Kerkstra A (1995) Kwaliteit van leven van somatische verpleeghuispatiënten. Een begripsverheldering en overzicht van meetinstrumenten (Quality of life somatic patients in nursing homes. A detailed definition and an overview of measurement instruments). NIVEL, NIVEL

Van der Zee KI, Sanderman R (1993) Het meten van de algemene gezondheidstoestand met de RAND-36: een handleiding (Measuring health with the RAND-36: a manual). Noordelijk Centrum voor Gezondheidsvraagstukken (NCG), Groningen

Van Eijk LM, Miedema I (2001) Ouderen op de wachtlijst nader bekeken. Een onderzoek onder ouderen op de wachtlijst voor een verzorgingshuis in Oost-Groningen (A closer look at elderly people on a waiting list for residential care in East Groningen). Provinciaal Ontwikkelingsinstituut Zorg en Welzijn Groningen (POZW)

Walker A (ed) (2005) Growing older. Understanding quality of life in old age. Open University Press, Berkshire

Walker M, Orrell M, Manela M, Livingston G, Katona C (1998) Do health and use of services differ in residents of sheltered accommodation? A pilot study. Int J Geriatr Psychiatry 13: 617–624

Wallace S (1990) The no-care zone: availability, accessibility, and acceptability in community based long term care. The Gerontologist 30:254–262

Wevers ME, Lowe NK (1990) A critical review of visual analogue scales in the measurement of clinical phenomena. Res Nurs Health 13:227–236

Yeatts D, Crow T, Folts E (1992) Service use among low-income minority elderly: strategies for overcoming barriers. The Gerontologist 32:24–31